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ABSTRACT

The major focus of this study is on the relationship between anxiety and achievement. It was predicted that with young children, anxiety is likely to have a debilitating effect on their standardized test scores as well as on teachers' ratings of their competence. This hypothesis is generally supported. The sample consists of 156 childen from preschool, kindergarten, and first grade. Results of testing and observation show negative correlations between the anxiety questionnaire and competence ratings for kindergarten children, and no relationship at all between perceived anxiety and achievement for the first grade sample, although anxiety ratings do show a significant negative correlation with achievement. This fact may be attributable to first grade children being more defensive than kindergarteners. Anxiety seems to show no relationship to achievement motivation for kindergarten children, but a positive relationship for first graders. For preschoolers it is found that achievement motivation reflects a concern about success, and may be viewed as a form of anxiety. Results suggest that concern about success and failure is more apt to be part of a general anxiety for the older children, particularly for girls, reflecting the fact that competition is generally less acceptable for girls than boys in our society. (Author/CJ)

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FINAL REPORT

A STUDY TO DETERMINE THE RELATIONSHIP BETWEEN ANXIETY AND LEARNING IN YOUNG CHILDREN

Project No. 8-B-010

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Bruce D. Grossman

Hofstra University

Hempstead, New York

September, 1969

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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INTRODUCTION

Problem

There is a tendency for scientists (behavioral scientists included) to isolate variables in order to increase the precision of measurement and study. Clearly, this phenomenon has occurred in the area of learning. The so-called "learning theorists" of psychological fame (e.g. Clark Hull, Kenneth Spence and B. F. Skinner) have developed their theories under laboratory conditions which have allowed them to separate the emotional from the intellectual (problem-solving) aspects of learning. That is not to say that these theories are without concern for motivation. However, the motivational forces have generally been primary (e.g., hunger and pain reduction), carefully controlled and occurring in sub-human species. Among the three theorists cited above, for example, Skinner has made the greatest attempt to apply his research to human learning. The applicability in the form of the teaching machine and "behavioral modification" cannot be refuted, but the rather complete reliance on reflexive, automatic functioning as opposed to more cognitive, thoughtful learning limits Skinner, as well as most other learning theorists when applied to academic achievement.

Part of the difficulty, as I have implied, is that humans engage in more interpretive activity than do animals. The cognitive theorists (e.g., Tolman and Piaget) recognized this as accounting for the greater variability in human responses to stimuli. Wouldn't it be convenient if all children saw school, their teacher, and the subject matter presented to them in the same way? The less automatic, more active, questioning child is behaving in an especially human manner. Ironically, schools have not always encouraged this type of child. In this respect, truly human learning tends to be more active, and less passive than animal learning and "learning theory" is apt to

suggest.

If the predictability of human learning is made difficult because of higher order intellectual functions, it is rendered even more unpredictable by the complexity of human motivation. Freud regarded most human curiosities, ambitions and socially acceptable productive acts at best as "sublimations" of more primitive, instinctual, less acceptable urges. The "learning theorists" to whom I referred above generally regard human motivation as a product of higher order conditioning or some other by-product of association with the satisfaction of primary drives; especially hunger. On the other hand, many contemporary theorists (e.g., Robert White, J. McV. Hunt, Carl Rogers) emphasize the natively curious, activity seeking nature of the young child and the related competence or effectance striving which seems likely to represent a non-derived, first-order basis for knowledge seeking and achievement.

A major purpose of the present investigation is to examine some of the complex ways in which the perceptions and general emotional states of young children can effect their assessed ability to achieve in a school situation. The variability of young children's functioning, as well as the interactive nature of the relationship between affective and intellectual functioning add to the complexity of the task outlined. Yet, the recent work of Burton White and others suggests that even in working with 4, 5 and 6 year olds we may well be beginning too late in attempting to discover the origins of a child's life style; that is, his way of looking at himself, interacting with his environment, adjusting to school, etc.

A practical implication of this study, as well as, in some sense, a source of theoretical inspiration, is the increasing problem of "underachievement". This author has been impressed by the degree of correspondence

in dynamics between children who perform below their capacities in school because of their cultural isolation ("culturally disadvantaged") and those children who have for other, emotional reasons, found it difficult to become involved in the educational process, whom I refer to as the "culturally disaffected". As I explained in our initial proposal, it is pretentious to think that a single, small-scale study such as this one will solve the problem of underachievement, but it is valuable nonetheless to consider our theoretical interest in the relationship between affect and cognition in this very pertinent contemporary context.

RELATED LITERATURE

Achievement Motivation

Beginning with McClelland and Atkinson's Original Study (1953), a rather substantial amount of research has been conducted on "achievement motivation". Since 1953 several good reviews of investigations and thinking in this area have been published; most relevant for our present purposes is the discussion in Motives in Fantasy, Action and Society, which was edited by John Atkinson (1958); a review by Vaughn Crandall, which appears in the sixty second year book of the National Society for the Study of Education (Child Psychology, 1963), and a review with special emphasis on young children by Virginia Crandall, which appears in Young Children (November, 1964).

Economic and Social Importance

McClelland (1961) advanced the thesis that economic progress in a society was heavily affected by the achievement orientation of the society's members. McClelland tested this notion by examining the relationship between the attitudes expressed in children's readers about the value of achievement, and the gain in electric power output shown in a number of countries (twenty-three nations between 1920 and 29 and forty nations between 1946 and 1955)

over a period of time. He found that the need achievement scores derived from the children's readers, which presumably reflected the society's attitudes, were positively correlated with the technological growth, as measured by use of electricity.

McClelland's study alone cannot be said to substantiate the importance of the achievement motive. However, added support for role played by attitude and child training in achievement comes from work by Rosen (1959, 1961) which shows children from lower socio-economic classes generally have a lower level of achievement motivation than children from more successful, middle-class families.[1] Douvan (1956) reports that among the mid-western high school seniors he studied, the middle-class students tended to show more desire to succeed when the rewards for success were merely "symbolical", while there was no difference between the lower and middle-class seniors when a "material reward" was offered.

McClelland has also observed an apparent religious influence on economic success which he attributes to different values regarding personal achievement found in religious teaching. For example, he noted that for twenty-four temperate zone countries those that were Protestant dominated were significantly above the Catholic countries in his indicies of industrial power. American Catholics are on the average lower in socio-economic status than Protestants, but this is, of course, affected by other factors. McClelland (1955) and other authors (most notably Max Weber, 1930) have attributed Protestant success to a valuing of individual independence, a belief about

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[1]It is interesting to note that a very high level of economic and social success on the part of parents can be related to less of an achievement orientation on the part of their children. McArthur (1955) found that Harvard freshman who came from middle-class public schools were generally higher in achievement motivation than freshman who had graduated from wealthier private schools.

being able to manipulate the environment rather than a passive, fatalist orientation and placing great value on work, sometimes referred to as "the Protestant ethic".

There is some question about whether the independent, entrepeurial attitude reflected in the achievement motive described by McClelland should be as highly valued in our society as it once was. Riesman (1950), for example, has pointed out that after a certain peak of productivity a society such as ours tends to develop a bureaucratic middle-class which is characterized by the "other-directed" personality who values affiliation and cooperation. On the other hand, there is considerable evidence that among the individuals in society who are still on their way up the achievement motive, characterized by competition, risk-taking and the ability to prolong gratification are extremely important assets.

The Achievement Motive in Young Children

It is a major purpose of the present investigation to examine some of the earliest manifestations of the achievement motive, and in particular, its relation to academic success. There has been relatively little research done on the achievement motive in the earliest school years. Winterbottom (1958) observed that the age period before seven is the most critical for the development of need achievement in boys. In a longitudinal study Kagan and Moss (1961) found a significantly positive relationship between ratings of the achievement motivation of children at age six and similar ratings made from interviews when these same subjects were twenty-nine. Kagan and Moss' findings suggest that the early manifestation of achievement motivation is quite a reliable index of later development.

In her excellent review of research on the achievement motive Virginia Crandall notes several elements which have been identified by different investigators as characteristic of the early development of achievement motivation. Dr. Vaughn Crandall and his associates have placed great emphasis on children's search for approval and their avoidance of disapproval as likely first sources of the desire to achieve. I would add that this is especially true of the preschool age child.

McClelland and his colleagues stress that the achievement motive may first be identified when the child begins to view his performance in terms of "standards of excellence". Piaget (1952) and Werner (1948) inform us that this process of evaluation is dependent on intellectual development, although it seems that even preschool children are apt to attribute "goodness" or "badness" to their products. This author has noted that still a third area closely allied with the development of the achievement orientation is the child's feelings about success and failure and his feelings about cooperation vs. competition.

In the present study we have been careful to distinguish between children's feelings about doing well and their actual competence as judged by tests and by teacher ratings. We were eager to see the extent to which we would find reliable differences in achievement motivation in young children and how these feelings related to other aspects of their functioning. Most of the theorizing about the origins of achievement motivation is based on an extrapolation from adult data. McClelland and his associates (1963) suppose that children derive intrinsic pleasure from mastery without a necessary connection to adult approval. Recent observations of infants in institutions suggest that children are "automatically" rewarded by making

changes in their invironment through movement which may be regarded as a precursor to mastery.

Whatever the origins of children's pleasure from mastery it seems likely that a more mature form of achievement motivation is affected, positively or negatively by its relationship to adult approval. Clearly, parents and teachers provide children with demands, as well as standards of excellence which get incorporated into their own desires for success and their feelings about the possibility of attainment. In some instances adults may discourage achievement drives because of fear of competition from children, fear of children knowing, etc. We shall discuss this in more detail when we deal with anxiety, below. For our present purposes it is sufficient to note that achievement motivation assumes a child's awareness of "better" or "worse", that is, some index of excellence.

It has been our experience that children below the age of three often appear to have some ability to evaluate their performance. On the other hand, they are severely limited in this regard by their inability to take perspective (Piaget, 1952) and as researchers, we were limited because of their minimal verbal facility. For this reason, primarily, we began our study with four year old children, including as well kindergarten and first-grade children (see Method, below).

Achievement Behavior

The relationship between achievement motivation and actual school achievement is fascinating to consider. To what extent is the motivation to do well a requirement for achievement? This question can be answered in part by noting the extent to which those children who do well on achievement tests and receive high ratings by teachers also score higher on the achievement mo-

tivation scales. By the same token, how many of our subjects rank highly in achievement motivation, but do not do well in school or on achievement tests? We, of course, would like to learn what accounts for the discrepancies between motivation and actual behavior in the case of achievement. In her review Crandall notes that one likely explanation for the student who has high motivation, but low achievement is anxiety. Rogers in his perceptual account of personally functioning (1953) suggests that anxiety often forces a person to distant reality to conform to his own self-perception so that he doesn't actually know how badly he is doing. A second phenomen, undoubtedly operating in many cases is the debilitating effect of anxiety noted by Spence and Taylor (1958), Sarason (1960), Grossman (1968) and others. Especially in more complex ego-involving tasks, anxiety is likely to interfere with task performance. We shall discuss this in somewhat more detail when we focus on anxiety below.

For the moment, in our considerations of achievement, we might note that what constitutes achievement behavior for young children is very much open to question. We deal with the measurement of achievement in a later section, but at this point is is important to note that possible differences between motivation and what we have elected to regard as achievement behavior may be attributable to difficulties of measurement.

Anxiety

Sarason and his colleagues have been most active in their investigation of the relationship between anxiety and learning in the school situation. Much laboratory work has been conducted with adults by Spence and Taylor and their colleagues at Iowa. These authors view anxiety as a

competing response which may interfere with learning in certain situations (Figure 1). Anxiety may also enhance learning by heightening motivation under different circumstances. What is responsible for this difference? Spence and Taylor found that task complexity plays an important role here. Specifically, they observed that on simple tasks or ones which are familiar anxiety may strengthen a response and consequent learning, while on more complex, less familiar task it is more likely to have a debilitating effect. Sarason's work with third grad children (1960) tends to support the finding of an interaction between task complexity and the effects of anxiety on learning. More recently, Grossman (1968) noted that the debilitating effect of anxiety is increased in younger children (first grade) because of their limited capacities for dealing with this emotional state and turning it to advantage.

Anxiety may be conceived of as a general state of apprehension related to unconscious fears or it may take a more specific form such as anxiety about tests, success and failure, etc. In many cases adult approval serves to reduce anxiety for young children and in that way serves as a reward for achievement. In fact, as we suggested above, anxiety reduction may serve as an initial motivation for learning and achievement. On the other hand, the problem of the underachiever is an excellent example of the situation in which anxiety, specific or general, prevents a child from realizing his academic potential.

Figure 1

Objectives

The form of anxiety which may account for underachievement varies. The child from the middle-class home who is afraid to learn because he unconsciously equates this with competition with his successful father differs from the ghetto child whose poor self-image makes him unable to cope with the school environment. Yet from the researcher's point of view these situations have much in common because they are representative of the relationship between affective and intellectual functioning. From the practitioner's point of view they are both similar because they represent problems of learning.

The present study is intended to detect the earliest awareness and signs of anxiety in young children and to further note the relationship between this affective state, the child's functioning in school (teachers' reports) and the child's ability to demonstrate learning on standardized tests. As we indicated in our initial proposal, it is pretentious to assume that such a study in itself will solve the problem of underachievement. On the other hand, it is clear that a more detailed and systematic look at the potential mechanisms of underachievement are vital for the development of more effective preventive and remedial measures to deal with this serious problem than are now available.

METHOD

Subjects

A total of 156 children, representing three general age groups took part in the study. A total sample of 51 preschool children (boys and girls) were drawn from three classes at the Hofstra University Child Development Center. As far as possible, all normal children in regular attendance were included. Necessarily, the children at the Center are generally a select sample (above average IQ, socio-economic status, etc.) because of the Center's university affiliation. Fourteen of the kindergarten sample study here include all of the Hofstra kindergarten class (boys and girls). An additional 31 kindergarten children (boys and girls) were taken from two classes of a predominately middle-class suburban Long Island public school, which also provided 60 first-grade children (30 boys and 30 girls) taken from three classes. The children from the public school kindergarten and first-grade classes were selected by their teachers (20 per class) who were asked to choose the top 10 and bottom 10 children (in terms of all around adjustment) from their class.

The Measurement of Achievement Motivation

McClelland's initial assessment of achievement motivation was an open-ended verbal measure (Thematic Apperception Test), which was primarily used with college students. Aronson (1958) developed a graphic (non-verbal) technique for measuring the achievement motive, which was also used successfully with college students. However, McClelland (1958) found that primarily because of low productivity and low distinction between forms, that this test was considered less effective as a measure with five year olds.

After discovering ourselves that presenting young children with pictures which required open-ended answers, as in the T.A.T., produced in-

adequate verbalization, our pretesting revealed that a story completion method resulted in the greatest interest and response productivity for the 3 to 6 year old children.

The Projective Achievement Test (PAT) which we finally developed for use here (see Appendix Ia) consists of five stories, which the child is asked to complete. It is deliberately kept short in order to be within a young child's limited attention span. We initially utilized doll figures in relating the stories, but found these distracting, rather than enhancing to attention. Three probes follow each of the stories, beginning with the most ended (a) and ending with a question (c) which requires that the child deal directly with the problem being posed. The content of the stories were selected to be relevant to the young child and to contain themes of competition, success and failure, as well as feelings about general competence.

The thematic scoring criteria were empirically developed from a sample of 20 tests (10 girls and 10 boys.) These best describe the child's way of dealing with the themes aroused by the stories (see Appendix II). The scoring scale is 4 points; the highest score is awarded to endings with the most unequivocally successful outcomes, a score of 3 generally represents a moderately successful or somewhat equivocal outcome, a score of 2 reflects an evasive or cooperative mode of responding, while a score of 1 indicates outright failure.

The Measurement of Achievement

Achievement was measured here in several different ways. To some extent this was necessitated by our inability to administer all of the same tests to the children of different age groups. In addition, we regarded looking at the same conceptual phenomenon from different empirical vantage

points as preferable methodolically than reliance on a single measure.

The Metropolitan Readiness Test, which is a standardized test frequently used as a prognosticator of school success was administered to the Hofstra kindergarten sample on two occasions (n=14). This same test had been administered to the public school first grade sample in the spring of their kindergarten year and this data was available to us. In addition all of the public school children, kindergarten (n=30) included were rated by their teachers on three dimensions: (1) academic competence (2) ability to get along with adults (3) ability to get along with peers. For the total Hofstra sample, kindergarten as well as preschool, a more involved form of competence rating was made by each of two teachers in a classroom, consisting of a composite score based on seven items scaled from on a 5-point rating scale (Appendix Ib). The seven scale items included: persistence, planfulness, flexibility, attention-span, originality, ability to think abstractly and tolerance for frustration.

An individual's score on an intelligence test may well be viewed as a form of achievement. Recent work with the disadvantaged in particular (Hunt, 1961) has underscored the cultural, environmental effect on "intelligence". In order to assess the potential relationship between intelligence as measured by a standardized test and our measures of achievement, we administered selected portions of the WPPSI to our Hofstra Kindergarten sample. Two of the subtests selected (Information and Similarities), represented <u>verbal</u> abilities, while the remaining two (Animal House and Geometric Design), represented <u>perceptual-motor</u> ability.

The Measurement of Anxiety

Just as in the case of our measurement of achievement, we elected to use two independent indices of anxiety, which assessed this phenomenon at different levels of functioning.

The first measure utilized, the anxiety questionnaire, consists of a series of 44 questions (Appendix Ic) which are to be answered "yes" or "no". The items were adapted from the General Anxiety Scale for Children developed by Sarason et al (1960). This measure is conceived of as "perceived anxiety" in that it is essentially a self-report of anxiety admitted to by the subject. Many of the original items on Sarason's scales were out of range for the young children being tested here. In an earlier study Grossman (1968) had been able to convert this written questionnaire to an individually administered, structured interview for use with first-grade children and the same procedure was used here. Some further modification was necessary to make the questions meaningful and relevant to the kindergarten group (five and six years old). Generally a procedure of simplifying the language, making the questions more concrete, and shortening the test somewhat by eliminating non-applicable questions was followed. Even with these modifications, however, we found that the test was too difficult for our four-year old preschoolers and we abandoned our attempts to use this measure with them. Thus, all first-grade and kindergarten children were individually administered the anxiety questionnaire.

We might add that this form of measurement is essentially "subjective" so that the objective truth of the replies by the child are not critical. What is important is that the items are not answered randomly, but according to the child's own perception of his emotional state.

The second measure of anxiety utilized in the present study was the Anxiety Behavior Scale (ABS). The ABS consists of sixteen items (Appendix Id) which were selected after extensive pretesting as behaviors readily identified by teachers, which are potentially reflective of anxiety. No one item in itself is intended to be necessarily indicative of anxiety, but a child who manifests a number of these behaviors, with some frequency is classified as being high on observable anxiety.

In contrast to the self-report (anxiety questionnaire) the ABS is a more objective index of anxiety as perceived from outside of the child, i.e., from overt behavior. This instrument was designed for use by teachers who were not necessarily sophisticated in psychology in that a minimum of interpretation was required in recording the behavior (this was left to the scoring). On the other hand, we had found that some training in the identification of behavior and definition of items provided a consensus with the teachers which added measurably to the reliability of the ABS. Consequently, training sessions were held with both the private and the public school teachers. In the case of the Hofstra kindergarten sample it was possible to have two teachers in the same classroom independently rate the children.

Test Observations

The testing sessions, during which the PAT and the Anxiety Questionnaire were administered, provide an excellent occasion for direct observation of children in a relatively standardized situation. We were not certain when time would allow for the analysis of this information, but we decided not to lose the opportunity to rate the children during the testing. In most cases the observations were made by someone other than the examiner.

The observations were of two general types: (1) behavioral recording of the children's activity level and facial expression, as well as the tone, quality and latency of verbal response, (2) overall ratings on a scale of 1 through 3 for five general qualities; task, orientation, general ease, social orientation, comprehension and mood. (Appendix Ie.)

RESULTS

Part I: Reliability

Wherever possible, the reliability of the measures used here were assessed. In the case of measures developed or adapted especially for this project, the reliability check enabled us to determine the likelihood of obtaining consensus on the behaviors we had designated for observation and measurement. The validity of these measures, of course, relies more directly on relationships of these to other independently derived indices of intellectual and emotional development. We also checked reliability on the standardized tests being used here because of the relatively small and select samples being studied.

A. Metropolitan Readiness Test

This is a standardized test, which reports a reliability of +.91 when Form A testing is followed by Form B. Using a similar sequence, but with a small kindergarten sample (n=13), a test retest reliability of +.85 was obtained here. A non-parametric reliability measure (Spearman Rank Order) described by Siegel (1956) was utilized because of the small sample.

It was noted, that while the children's relative scores did not change significantly from the first to the second testing, all of the Hofstra kindergarten gained considerably in their absolute readiness scores from the December to May testing (Table1). A "t" test analysis reveals the gain is significant at $<.01$ level of confidence. We were curious about the extent to which the gain in readiness was uniformly distributed among all of the children or whether it occurred differentially. This was assessed by corre-

Table 1

Metropolitan Readiness Scores
Hofstra Kindergarten

Testing Date	Mean Raw Score	
December, 1968	32.6	
May, 1969	53.7	
Change in score ($\bar{D}$)	+21.1	P= < .001

lating each child's change in score with his initial score. There was no clear general relationship here (r=.02). There was some evidence of a "ceiling effect" since the child with the highest initial score showed the second lowest improvement. However, another child, with the second highest initial score, managed to demonstrate the second highest improvement. It did appear that most of the largest gains in score occurred with children whose scores were initially in the middle range of achievement.

B. Projective Achievement Test (PAT)

The PAT was designed especially for this project. Correlations of reliability were obtained between Rater 1 and Rater II for several of the subject groups. The correlation between Rater 1 and Rater II for 30 public school kindergarten children (boys and girls combined) is +.78. For the 14 kindergarten children at Hofstra the correlation is +.91. Separate coefficients of reliability were determined for first-grade boys and girls. For the boys (n=21) the reliability is +.92 for the girls, (n=20) the reliability is +.99.

C. Teachers Ratings of Anxiety

All of the children were rated by their teachers on a sixteen item scale which was developed earlier by the senior investigator (Appendix Ic). However, assessment of the inter-rater reliability was only possible for the Hofstra sample, since it was only there that two teachers were assigned to each classroom. For the Hofstra kindergarten class (n=14) the inter-rater reliability is +.52, which is significant at $<.01$ level of confidence.

D. Anxiety Questionnaire

(1) Split-half Reliability

Since this was a rather long test for the young children taking part in our study, we decided not to re-administer it in order to assess test-retest reliability. We elected rather to observe the relationship between alternate items (split-half reliability) of the 44-item scale. For the Hofstra kindergarten the split-half reliability is +.90, while for the Forrest Lake kindergarten the correlation between odd and even items is +.83. For the total kindergarten the split-half reliability is +.84.

(2) Correlation with Total Score

A somewhat more detailed analysis of the responses on the anxiety questionnaire was done for the kindergarten boys. Since this was likely to be the most immature group in our sample it was felt that it represented the most severe test of consistency in our data. Our first procedure was to perform a point-biserial correlation between the scores on each of the questionnaire items and the total score. The results here varied from a high +.99 relationship to a low +.08. The mean correlation is +.536. The correlations are arranged in descending order in Graph I. For n=23 the .05 level of confidence is +.337. Thirty-eight out of 44 items (87%) were significant at that level. Four questionnaire items correlated +.90 with the total. These

were: item 6 ("Do you worry whether your mother is going to get sick?"), item 7 ("Would you be scared if you had to walk home alone at night?"), item 31 ("Are you afraid of being burned?") and item 38 ("Do you get scared when you have to go into a dark room?").

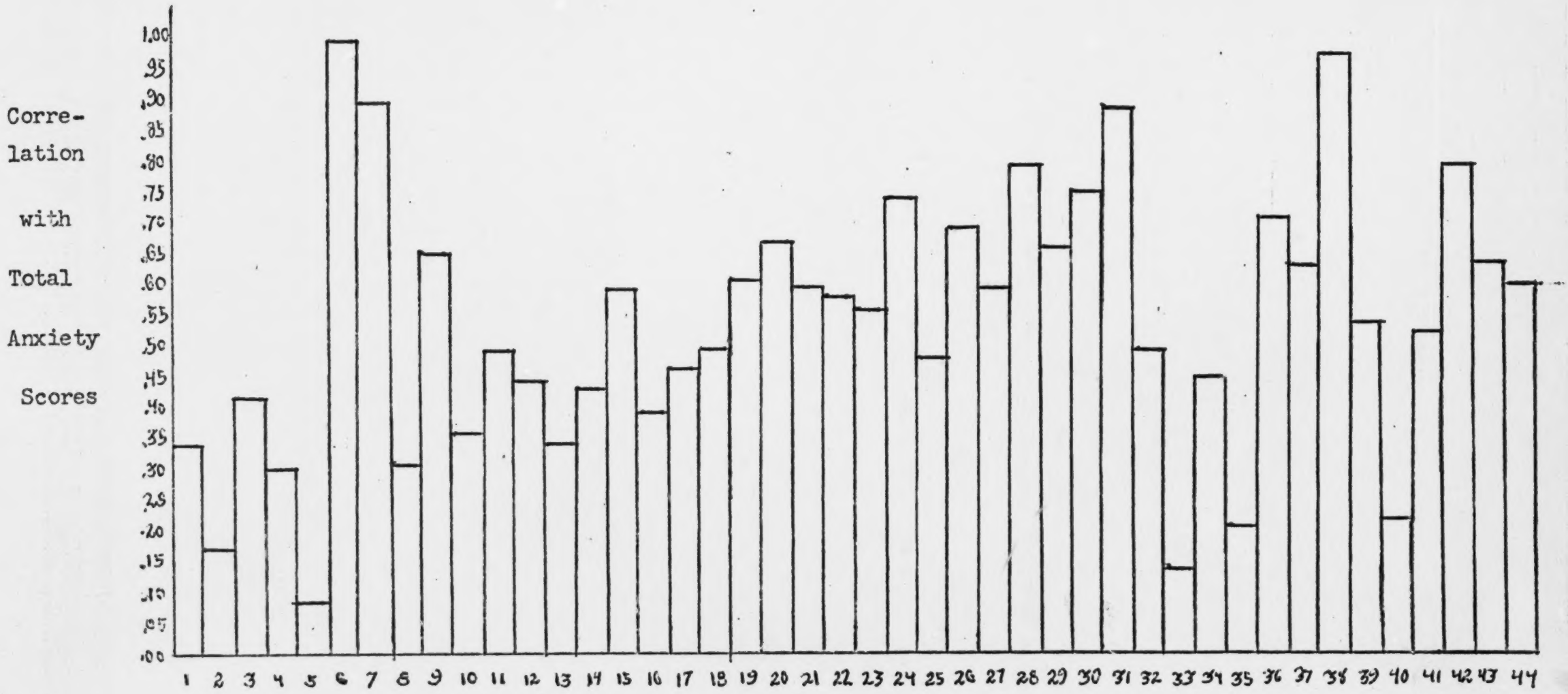
Five of the questionnaire items correlated +.20 or less with the total score. These were: item 1 ("When you are away from home, do you worry about what might be happening there?"), item 5 ("If you climbed a ladder, would you worry about falling off?"), item 33 ("Are you ever unhappy?"), item 35 ("Are you afraid to jump or dive into deep water because you might get hurt?") and item 40 ("Have you ever had a scarey dream?").

Looking at these two extreme groups of items (the four items correlating highest with the total score and the five items correlating least with the total), we noted there was no difference in the number of children answering yes in the two groups; that is, for the 23 subjects observed, the average number answering "yes" to the items correlating highest with the total score and the average number of children answering "yes" to those items correlating lowest with the total score is the same (15).

GRAPH I

Correlation of Individual Items Scores
With Total Anxiety Questionnaire Scores

KINDERGARTEN BOYS



Results

Part II: Substantive Findings

A. The relationship between "perceived anxiety" and standardized achievement

As may be noted in Table 2, for the Hofstra kindergarten sample (n=14), the correlation between "perceived anxiety" (the anxiety questionnaire) and standardized achievement (Metropolitan Readiness Test) is -.213. We do not have this data for the public school kindergarten children since they will not be administered the Metropolitan until September, 1969.

For the public school first-grade children there is, in effect, no relationship observed between anxiety and standardized achievement (see Table 2).

Table 2

The relationship between the anxiety questionnaire and achievement

		Metropolitan Readiness Test			Teacher Ratings Competence		
		N	R	P	N	R	P
Kindergarten							
	Total	-	-	-	45	-.2430	
	Private	14	-.213	N.S.	14	-.419	<.06
	Public	-	-	-	31	-.189	N.S.
	Girls	-	-	-	16	-.3406	<.10
	Boys	-	-	-	15	-.2722	N.S.
First Grade		N	R	P	N	R	P
	Total	59	+.030	N.S.	59	-.108	N.S.
	Girls	30	-.001	N.S.	29	.021	N.S.
	Boys	29	-.073	N.S.	30	.000	N.S.

B. The relationship between "perceived anxiety" and teachers' ratings of competence.

For the Hofstra kindergarten sample (Table 2) the correlation between the anxicty questionnaire and the teachers" ratings of competence is -.419, which is significant at the .06 level of confidence. There is also a negative relationship between "perceived anxiety" and competence observed for the public school sample (r=-.189) but it is not significant. Since the competence scales were different for the two kindergarten groups it was necessary to convert the raw scores to standard scores in order to combine the populations. Following this procedure we found that the relationship for the total group is -.243, which is significant at the .06 level of confindence. The difference between the kindergarten boys and girls was not significant for the relationship between competence and "perceived anxiety".

For the total first grade sample (Table 2) there is, in effect, no observable relationship between competence and perceived anxiety.

C. The relationship between "perceived anxiety" and achievement motivation (see Table 3).

For the total kindergarten sample, the correlation between the anxiety questionnaire and the projective achievement test is +.018. For the boys alone the correlation is +.098 while for the girls alone it is -.148. The correlation between these two measures for the Hofstra kindergarten sample alone is -.0059 and for the public school sample alone the correlation is +.0352. None of these relationships is significant.

For the total first grade population the anxiety questionnaire and the PAT are correlated +.212, which is significant at the .05 level of

confidence. Separating the boys and girls we note that for the former the relationship between the anxiety questionnaire and the PAT is +.284, while for the latter it is +.277 both of which are significant at the <.10 level of confidence.

Table 3

The relationship between the anxiety questionnaire and achievement motivation (PAT)

Kindergarten	N	R	P	First Grade	N	R	P
Total	45	.018	N.S.	Total	59	.212	<.05
Private	14	.006	N.S.	Girls	30	.277	<.10
Public	31	.035	N.S.	Boys	29	.284	<.10
Girls	16	-.148	N.S.				
Boys	15	.098	N.S.				

D. The relationship between "perceived anxiety" and observed anxiety

As may be noted in Table 4, the correlation between the anxiety questionnaire and the teachers' ratings of anxiety is +.1043 for the total kindergarten sample. This same low positive correlation obtains for all of the separate kindergarten analyses, although it seems somewhat greater for the girls (r=+.200).

For the total first grade sample the correlation between the anxiety questionnaire and the teachers' rating of anxiety is negatively related. The relatively low (-.298) negative correlation between these two measures is significant at the .05 level of confidence. The negative relationship obtains for both boys and girls, although it is higher and sig-

nificant for boys.

Table 4

The relationship between the anxiety questionnaire and the anxiety ratings

Kindergarten	N	R	P	First Grade	N	R	P
Total	45	.104	N.S.	Total	59	-.298	<.025
Girls	16	.200	N.S.	Girls	30	-.140	N.S.
Boys	15	.012	N.S.	Boys	29	-.311	<.05
Private	14	-.112	N.S.				
Public	31	.160	N.S.				

E. The relationship between observed anxiety and standardized achievement

Since the Metropolitan Readiness Test was not administered to the public school sample, we were only able to estimate this relationship from the relatively small kindergarten sample. The relationship between the anxiety ratings and the Metropolitan Readiness Test scores for the Hofstra kindergarten was not significant. (See Table 5).

On the other hand, for the total first grade sample (Table 5), the relationship between the anxiety rating and the Metropolitan Readiness Test is more substantial (r=-.378). For the girls alone this relationship is -.516, while for the boys it is somewhat less sizable (r=-.215).

Table 5

The relationship between anxiety ratings and achievement

	Metropolitan Readiness			Competence Ratings		
Kindergarten	N	R	P	N	R	P
Total	-	-	-	45	-.236	.06
Private	14	.014	N.S.	14	-.367	< .10
Public	-	-	-	31	-.223	< .10
First Grade	N	R	P	N	R	P
Total	59	-.378	< .01	59	-.309	< .01
Girls	30	-.516	< .01	30	-.410	< .01
Boys	29	-.215	N.S.	29	-.125	N.S.

F. The relationship between observed anxiety and competence.

In Table 5 it may be noted that for both the kindergarten and first grade samples the relationship between the teachers' ratings of anxiety and competence are consistently negative. For the kindergarten children the correlations between these two ratings are less substantial than observed in the first grade. There were no sex differences in the kindergarten sample, while for the first grade girls there is a tendency for competence and anxiety to more clearly negatively related than for the boys.

G. The relationship between observed anxiety and achievement motivation (PAT) (See Table 6)

For the kindergarten children there is in effect, no observable relationship between the teachers' ratings of anxiety and the children's

scores on the Projective Achievement Test. On the other hand, for the first grade girls only (not for the boys) there is a rather substantial positive correlation between observed anxiety and measured achievement motivation (r=+.425).

Table 6

The relationship between the anxiety ratings and achievement motivation (PAT)

Kindergarten	N	R	P	First Grade	N	R	P
Total	45	-.049	N.S.	Total	59	.197	N.S.
Private	14	-.218	N.S.	Girls	30	.425	.01
Public	31	-.006	N.S.	Boys	29	.069	N.S.

H. The relationship between achievement motivation (PAT) and standardized achievement. (See Table 7)

Again, standardized test scores on readiness are only available for the private (Hofstra) kindergarten children. This is a small sample (n=14), which reveals no relationship between scores on the MRT and the children's PAT scores. On the other hand, for the first grade girls there is a decided relationship between achievement motivation as measured by the projective test and the girls' scores on the Metropolitan Readiness Test (r= +. 979)(Table 7). This relationship does not obtain for the boys, but taking girls and boys together, a correlation of +.487 is observed between scores on the PAT and the MRT.

Table 7

The Relationship between Achievement Motivation (PAT) and Achievement

	METROPOLITAN READINESS			COMPETENCE RATINGS		
Kindergarten	N	R	P	N	R	P
Total	-	-	-	45	-	-
Private	14	-.032	N.S.	14	.477	<.05
Public	-	-	-	31	-.182	N.S.
Girls	-	-	-	16	-.046	N.S.
Boys	-	-	-	15	-.525	<.01
First Grade	N	R	P	N	R	P
Total	59	.487	<.001	59	.112	N.S.
Girls	30	.979	<.001	29	.155	N.S.
Boys	29	-.050	N.S.	30	.040	N.S.

I. The Relationship between Achievement Motivation and the Teachers' Ratings of Competence (See Table 7)

As may be seen in Table 7, the teachers' ratings of the kindergarten children's competence and the children's scores on the projective achievement test are negatively related for both the private and public school samples. For the first grade sample, however, there appears to be no relationship between projective tests of achievement motivation and the teachers' ratings of competence.

J. The Relationship between the Teachers' Ratings and Test Scores

A form of inter-test reliability which is interesting to note here is the relationship between competence, as rated by the teachers, and the children's scores on the Metropolitan Readiness Test. In all cases, as one would expect, there is a positive relationship. For the small private school kindergarten sample the correlation is +.445, while it is even more substantial (+.739) for the first grade. The relationship between these two measures of

achievement is somewhat larger for the first grade girls (+.850) than for the boys (+.646).

K. Sex Differences

Perhaps the most consistent result of personality studies of young children are the dramatic sex differences observed (e.g., Bronfenbrenner, 1961; Grossman, 1968; Kagan and Moss, 1963). We have previously noted several sex differences in the relationship between anxiety and achievement. In Table 8 we report our investigation of possible differences between the boys and the girls on each of the separate measures being employed here.

Table 8

Sex Differences in Measures of Anxiety and Achievement

Kindergarten

	Anxiety Ques.	Anxiety Rating	PAT	MAT	Competence
Boys	23.45	1.54	13.91	35.38[a]	9.27[c]
Girls	25.77	1.49	14.50	38.17[b]	9.81[d]
D	2.32	.05	.69	2.79	.54
S^2	109.92	.209		149.23	3.08
"T"	.73	.37		.42	.86
P	N.S.	N.S.	N.S.	N.S.	N.S.

a. Hofstra only (n=8)
b. Hofstra only (n=6)
c. Public School (n=15)
d. Public School (n=16)

First Grade

	Anxiety Ques.	Anxiety Rating	PAT	MAT	Competence
Boys	18.76	2.16	13.83	67.21	8.77
Girls	25.93	1.86	15.13	71.87	10.00
D_2	7.17	.30	1.30	4.66	1.33
S^2	95.28	.363	5.16	144.93	.586
"T"	2.81	1.92	2.19	1.49	6.72
P	$<.01$	$<.05$	$<.05$	N.S.	$<.01$

In Table 8 you will note that there were no significant differences between the kindergarten boys and girls on any of the measures of anxiety and achievement. On the other hand, there are consistent differences between the girls and the boys in the first grade. It is interesting to note that the girls scored significantly higher in anxiety as measured by the questions answered by themselves than did the boys. Yet, they were rated significantly lower than the boys in anxiety as rated by the teachers. The first grade girls were also significantly higher than their male counterparts in achievement motivation, as well as in the teachers' ratings of their competence. There is no difference, however, between the girls and boys in their scores on the Metropolitan Readiness Test.

L. Preschool Findings

We decided to report the findings on the preschool children separately for two principal reasons: (1) it is less complete and not entirely comparable to the data on the older children and (2) we are still in the process of analyzing and collecting data on this younger sample.

Since the preschool children were too young for a meaningful administration of the anxiety questionnaire, our only measure of anxiety with this group is the anxiety ratings made by the teachers. As may be noted in Table 9, the relationship between the anxiety ratings and the ratings of the children's competence differs for boys and girls. With the girls, the relationship between these measures is negative, while interestingly enough, the relationship between anxiety and competence is positive for

the preschool boys.

Table 9

Preschool Findings

Correlation between:	r Boys	r Girls	r Total
Ratings of Competence and Anxiety Ratings	.3475*	-.4017*	.0072
Ratings of Competence and WIPPSI Scores	.5119**	.2706	.3706**
Projective Achievement Test and Anxiety Ratings	-.5807*	.4644*	.1453
Projective Achievement Test and WPPSI Scores	-.5992*	.4215*	-.1667

*p < .05
**p < .01

How does anxiety relate to the preschool children's achievement motivation? In Table 9 you may observe that this relationship is precisely opposite to the relationship between anxiety and actual achievement (noted above). Anxiety and achievement motivation are significantly negatively related for the boys and positively related for the girls; that is, the more anxious preschool boys tend to have higher ratings of competence, but lower achievement motivation, while the more anxious preschool girls tend to have lower competence, but higher achievement motivation.

We have also administered a battery of four items from the Wechsler Preschool and Primary Scale of Intelligence (WIPPSI) to the preschool children. Here we find that intelligence, as measured in this way, is significantly related to judgments of competence made by teachers for the boys in our sample, with a trend in the same direction for the girls. However, it is clear that whatever is meant by competence in the classroom does differ from measured intelligence.

It is interesting to note that the PAT relates in a very similar way to the Children's WPPSI scores as it does to anxiety. The more intelligent boys tend to show less achievement motivation, as well as less anxiety, while the more intelligent girls tend to be more achievement oriented and more anxious.

DISCUSSION

The major focus of the present study is on the relationship between anxiety and achievement. It was predicted that with young children especially, anxiety is likely to have a debilitating effect on their standardized test scores, as well as on teachers' ratings of their competence. In general, this hypothesis finds support here.

Anxiety, as reflected in the children's own answers to the questionnaire ("perceived anxiety") shows less strong of a relationship to the measures of achievement than do the anxiety ratings made by the teachers. As predicted, all of the correlations between the anxiety questionnaire and the competence ratings are in a negative direction for the kindergarten children. However, only the correlations for the private school sample and for the girls (private and public school) are of any substance. The correlation between "perceived anxiety" and the readiness test is also negative for the private kindergarten, but non-significant.

There seems to be no relationship at all between "perceived anxiety" and achievement for the first grade sample. On the other hand, the anxiety ratings do show a significant negative correlation with achievement, as measured by both the Metropolitan Readiness Test and the teachers' ratings of competence. This discrepancy is not likely to be attributable to the anxiety questionnaire's being a less effective measurement than the anxiety ratings since we do find some evidence of the predicted relationship with the anxiety questionnaire for the younger children.

The lack of relationship between the anxiety questionnaire and achievement for the first grade children may be attributable to the older

children being more defensive than the kindergarten sample. On this basis one would expect to find that the first graders have lower scores on the anxiety questionnaire than the younger children. This is the case; the mean anxiety score for the kindergarten children is 1.12, while for the first graders it is .76, which is significantly lower ($p < .05$).

The anxiety ratings are negatively correlated with the ratings of competence for the kindergarten children (public and private school), but unlike the anxiety questionnaire, the teachers' ratings of anxiety are not related to the private school kindergarten Metropolitan Readiness scores. The anxiety ratings are also correlated negatively with the teachers' ratings of competence for the preschool boys, but it appears that anxiety, at least as rated by the teachers, is positively related to the competence scores for the preschool girls. This somewhat surprising reversal was also noted by Grossman (1968) in earlier work which observed that anxiety is more likely to facilitate learning in girls, while it tends to have a more debilitating effect with boys (first grade sample).

A second concern of the present study is the relationship between the child's feelings about achievement (achievement motivation) and his actual success in school and on tests. Again, there appear to be some differences between the three age groups studied here. For the first grade children the scores on the Projective Achievement Test are significantly positively related to their scores on the Metropolitan Readiness Test. A look at the separate analysis by sex reveals that this relationship is entirely attributable to the very high correlation between achievement motivation and readiness for the girls. One might say that the first grade girls' fantasies about achievement are much more consistent with the realities of

their test scores than the boys. It is interesting to note here that the first grade girls generally score higher on the PAT than the boys. We have little to compare these findings with in the kindergarten since the Metropolitan Readiness Test has only been administered to the relatively small (n=14) private school sample for which no relationship between the PAT and the Metropolitan scores is observed.

Looking now at the relationship between the PAT and the teachers' ratings of competence, we find that these two measures are unrelated for both the girls and the boys in the first grade. However, we do find a substantial positive correlation between the PAT and competence for the private school kindergarten sample. This relationship does not obtain for the public school kindergarten children, in fact, there is a significant negative correlation between these two measures for the public school kindergarten boys taken separately. It seems that here we are observing an even more intense defensive reaction than noted earlier, where the boys who are the most success oriented in their fantasies are actually rated as least competent by their teachers. For the preschool children we find that achievement motivation reflects a concern about success and as such, may be viewed as a form of anxiety. As we have just noted for the kindergarten boys, a high level of achievement motivation, as a high level of anxiety, be debilitating for performance. It is somewhat surprising, then, that anxiety itself, shows no relationship to achievement motivation for the kindergarten children. However, this is not so for the first grade. Here we find a positive relationship between the anxiety questionnaire and the PAT for boys and girls combined, while a high positive correlation between

PAT and teachers' ratings of anxiety for first grade girls (but not for boys).

It appears from the above results that concern about success and failure, which is measured by the PAT, is more apt to be a part of general anxiety for the older (first grade) children and especially for the girls. Perhaps the higher relationship between anxiety and the need for achievement found in our first grade girls reflects the fact that in our society competition is generally considered less acceptable for girls than for boys. On the other hand, both the boys and the girls (first grade) show small, but significant positive correlations between their scores on the projective achievement test, which again seems to confirm the likelihood of there being a relationship between achievement motivation and anxiety.

Still a third question raised by this study is one of definition -- "*Just what is achievement?*" This question is particularly relevant when one is considering the academic development of young children. As we have expressed in a recent publication (The Academic Grind at Age Three, 1969), it is our view that the premature narrowing of the definition of what is acceptable achievement behavior is wasteful of human potential, as well as blatantly short-sighted. For this reason we chose to measure achievement, not only in the most formal sense (a standardized test), but also as reflected in the children's total classroom functioning, including interpersonal competence, as well as task behavior. Our findings here reveal a considerable degree of correspondence between our achievement measures. In addition, for the preschool children and for the private school kindergarten

sample, intelligence test scores are available and also show significant positive relationships with our measures of achievement. On the other hand, it is important to note the two types of achievement measures referred to above very frequently related quite differently from one another to indices of anxiety and of achievement motivation.

As was indicated earlier in this report (p. 28), differences between personality functioning between girls and boys have been observed by many investigators. Here we find essentially no differences in our measures between either the preschool or the kindergarten boys and girls, but rather substantial differences in levels of anxiety, competence and achievement motivation for the first grade boys and girls. This finding is likely to be attributable to developmental process (environmental and maturation) which contribute to the differentiation of personality in the older (first grade) children, although it might also reflect more accurate measurement in the first grade sample.

Finally, we should note that in spite of consistencies between boys and girls in the measurement of isolated variables, the relationship between these measures is very frequently different for boys and girls. With the preschool children, for example, anxiety is positively related to competence for boys and negatively related for the girls.

SUMMARY AND CONCLUSIONS

Perhaps the most significant finding from the present study is the difficulty one encounters in attempting to measure meaningful[1] personality variables in young children. We are pleased to have been able to find considerable reliability of measurement (in terms of reliability), but we are also very concerned with "construct validity", that is, do our findings have meaning and relevance in terms of our existent theories and knowledge? We have just noted for example that achievement as determined by test measurement may have in some contexts a very different meaning than classroom achievement. Even more dramatically, we find that our two measures of anxiety not only do not relate to one another for the kindergarten children, but are actually negatively related for the first graders. With the current emphasis on evaluation, surely we must be wary of what is meant by anxiety and by achievement in young children.

We have sought to substantiate the view that in our quest for academic excellence we must not lose sight of the very important role played by emotional factors in the learning process. We find here, that even with our preschool through first grade sample, there is often a significant relationship between anxiety and achievement. Specifically, the anxiety ratings made by the teachers most consistently show a negative relationship to achievement. These correlations are the most substantial for the older

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[1]Measuring easily identifiable motor behaviors is clearly less difficult, but to our mind less meaningful, than attempting to assess more global, psychological units of behavior.

(first grade) sample, which is a developmental trend which we are eager to verify in future studies. In fact, for the preschool boys we observe a significant positive correlation between anxiety and competence.

Anxiety comes in many forms. As we have noted above, even our two anxiety measures here seem to be measuring different phenomena. We have been reasonably successful in measuring what might be viewed as another form of anxiety here, that is, achievement motivation. The relationship between general anxiety and anxiety about success, failure and cooperation are most clearly related (positively) for the first grade and preschool girls, while scores on the Projective Achievement Test are negatively related to anxiety for the preschool boys. Consistent with this finding, achievement motivation is positively related to achievement for both the first grade and preschool girls, while it is negatively related to achievement for the preschool boys. This suggests that the anxiety reflected in achievement motivation may be facilitative of achievement for some children (perhaps more likely for girls than boys). In any case, the present study underscores the importance of this particular personality factor (achievement motivation) as a determinent of school behavior. We now plan to examine in more detail, by extensive classroom observation, primarily, specific ways in which both anxiety and achievement motivation affect learning.

APPENDIX I a

Projective Achievement Test (PAT)[1]

Instructions for Test Administration

This form should be administered, individually to each child. The stories should be read slowly with expression to capture and hold the child's interest. The child is introduced to the hero figure (Joey or Jill) in the form of a doll figure. Doll figures are also used to represent the main characters in the stories. The questions about each story should be asked in sequence, giving the child ample opportunity to answer the prior question before the next is asked. The child should be given the following directions:

> Now we are going to play a special game. I am going to read you some stories and then you have to tell me how the stories end. I'll show you how. Listen carefully; here is the first story.

1. Joey (Jill) has been building a house out of blocks. The little boy (girl) next to him (her) wants to build a bigger house.

    a. What does Joey (Jill) do?
    b. And then what happens?
    c. Does he (she) build a bigger house?

*2. Joey (Jill) is trying to read a story by himself (herself) but he (she) can't figure out all of the words.

    a. What does he (she) do?
    b. And then what happens?
    c. Does he (she) finish the story?

---

[1]Bruce D. Grossman

*The following alternative version of item 2 is to be given to preschool and kindergarten children:

2b Joey (Jill) is trying to do a very hard puzzle. He (she) can't figure out where to put all of the pieces.

    a. What does he (she) do?
    b. And then what happens?
    c. Does he (she) finish the puzzle?

PAT

3. The teacher is asking the class a question. She wants to know which of the children in the class knows the answer Joey (Jill) raises his (her) hand very high to get picked by the teacher.

    a. What happens?
    b. What else happens?
    c. Does Joey (Jill) get picked?

4. The children are outside on the playground. Joey (Jill) and his (Her) friend are both swinging on the swings. Each boy (girl) is trying to swing as high as he (she) can.

    a. What happens?
    b. What else happens?
    c. Who swings higher, Joey (Jill) or his (her) friend?

5. Joey's (Jill's) mother wanted him (her) to do well in school. She went to see Joey's (Jill's) teacher.

    a. What did the teacher tell the mother about Joey (Jill)?
    b. What else did the teacher say?
    c. Did the teacher say that Joey (Jill) was doing a good job in school?

SUPPLEMENTARY QUESTIONS

1. Who is the best boy (girl) in your class? Who is the worst?

    Are you more like_____(the best child) or like_____(the worst)?

2. If you could be any animal, what kind of animal would you like to be? Why?

APPENDIX Ib

Teacher Rating Scale*

Name of Child_____ Date of Rating_____
Name of Rater_____

COMPETENCE							Explanation (Please read carefully)
1.	Very Persistent	1	2	3	4	5	Gives up easily	1. ("stick-to-it-tiveness" in tasks)
2.	Very long attention span	1	2	3	4	5	Very short attention span	2. (Especially in reference to listening to directions or stories)
3.	Very planful	1	2	3	4	5	Unplanful	3. (Thinks before acting-seems to have some plan in mind)
4.	Very flexible	1	2	3	4	5	Inflexible	4. (Ability to alter routines and task approaches when appropriate)
5.	Very original	1	2	3	4	5	Unoriginal	5. (Unique approaches and/or products)
6.	High ability to abstract	1	2	3	4	5	Low ability to abstract	6. (Ability to consider abstract concepts)
7.	High tolerance for frustration	1	2	3	4	5	Low tolerance for frustration	7. (Ability to accept failure, interruptions, etc.

*Abstracted from total scale of 26 items

APPENDIX Ic

General Anxiety Questionnaire[1]
(Children's Form)

1. When you are away from home, do you worry about what might be happening at home?
2. Do you sometimes worry about how you look?
3. Are you afraid of mice or rats?
4. Do you ever worry about things at school?
5. If you were to climb a ladder, would you worry about falling off it?
6. Do you worry about whether your mother is going to get sick?
7. Would you get scared if you had to walk home alone at night?
8. Do you ever worry about what other people think of you?
9. Do you get a funny feeling when you see blood?
10. When your father is away from home, do you worry about whether he is going to come back?
11. Are you frightened by lightning and thunderstorms?
12. Do you ever worry that you won't be able to do something you want to do?
13. When you go to the dentist, do you worry that he may hurt you?
14. Are you afraid of things like snakes?
15. When you were small, were you ever scared of anything?
16. When you are in bed at night trying to go to sleep, do you often find that you are worrying about something?
17. Are you sometimes frightened when looking down from a high place?
18. Do you get worried when you have to go to the doctor's office?

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[1]Adapted from Sarason, et al (1960).

19. Do some of the stories on television scare you?

20. Have you ever been afraid of getting hurt?

21. If you were home alone and someone knocked on the door, would you get scared?

22. Do you get a scary feeling when you see a dead animal?

23. Do you think you worry more than other boys and girls?

24. Do you worry that you might get hurt in some accident?

25. Has anyone ever been able to scare you?

26. Are you afraid of things like guns?

27. Without knowing why, do you sometimes get a funny feeling in your stomach?

28. Are you afraid of being bitten or hurt by a dog?

29. Do you ever worry about something bad happening to someone you know?

30. Would you worry if you were home alone at night?

31. Are you afraid of being burned?

32. Do you worry that you are going to get sick?

33. Are you ever unhappy?

34. When your mother is away from home, do you worry about whether she is going to come back?

35. Are you afraid to dive or jump into the water because you might get hurt?

36. Do you get a funny feeling when you touch something that has a real sharp edge, like a knife?

37. Do you ever worry about what is going to happen?

38. Do you get scared when you have to go into a dark room?

39. Do you worry about whether your father is going to get sick?

40. Have you ever had a scary dream?

41. Are you afraid of spiders?

42. Do you sometimes get the feeling that something bad is going to happen to you?

43. When you are alone in a room and you hear a strange noise, do you get a frightened feeling?

44. Do you ever worry?

APPENDIX Id Dr. Grossman

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PRE-SCHOOL ANXIETY RATING SCALE

Child's Name: _____ Anxiety Score: _____

Please circle the number to the left of the appropriate statement.

1. Does the child ask about his mother or show other signs of being concerned about separation from her?

   1. Almost never (The child is hardly ever like this; it is not characteristic of him.)
   2. Occasionally (The child is like this once in a while; it is only slightly characteristic of him.)
   3. Sometimes (The child doesn't do this often, but there are times when he is like this; it is somewhat characteristic of him.)
   4. Fairly often (The child is often like this; it is fairly characteristic of him.)
   5. Very often (The child is very often like this; it is very characteristic of him.)

2. Does the child express or show doubts about his ability to do certain things?

   1. Almost never
   2. Occasionally
   3. Sometimes
   4. Fairly often
   5. Very often

3. Is the child withdrawn in his dealing with other children? (i.e., Does he tend to watch others or give indications that he would like to join them, but cannot bring himself to do so?)

   1. Almost never
   2. Occasionally
   3. Sometimes
   4. Fairly often
   5. Very often

4. Is the child cautious in his physical activities? (i.e., Does he show signs of being afraid in climbing, jumping off, etc.?)

   1. Almost never (The child is hardly ever like this; it is not characteristic of him.)

   2. Occasionally (The child is like this once in a while; it is only slightly characteristic of him.)

   3. Sometimes (The child doesn't do this often, but there are times when he is like this; it is somewhat characteristic of him.)

   4. Fairly often (The child is often like this; it is fairly characteristic of him.)

   5. Very often (The child is very often like this; it is very characteristic of him.)

5. Has the child shown signs of being fearful of animals? (pets at school or those seen on trips?)

   1. Almost never

   2. Occasionally

   3. Sometimes

   4. Fairly often

   5. Very often

6. Does the child seem fearful about trying new things? (i.e., Does he seem afraid to approach new situations and activities?)

   1. Almost never

   2. Occasionally

   3. Sometimes

   4. Fairly often

   5. Very often

7. Is the child fearful of strangers? (visitors to the classroom, etc.?)

   1. Almost never

   2. Occasionally

   3. Sometimes

   4. Fairly often

   5. Very often

8. Does the child suck his thumb or bite his nails?

   1. Almost never (The child is hardly ever like this; it is not characteristic of him.)
   2. Occasionally (The child is like this once in a while; it is only slightly characteristic of him.)
   3. Sometimes (The child doesn't do this often, but there are times when he is like this; it is somewhat characteristic of him.)
   4. Fairly often (The child is often like this; it is fairly characteristic of him.)
   5. Very often (The child is very often like this; it is very characteristic of him.)

9. Does the child stutter, or display a nervous habit other than the ones mentioned above?

   1. Almost never
   2. Occasionally
   3. Sometimes
   4. Fairly often
   5. Very often

10. Does the child seek reassurance about the quality of what he has done? (e.g., worrying about his painting being "good" or "pretty")

   1. Almost never
   2. Occasionally
   3. Sometimes
   4. Fairly often
   5. Very often

11. Does the child speak of not feeling well, having aches and pains, etc., in the absence of observable illness?

   1. Almost never
   2. Occasionally
   3. Sometimes
   4. Fairly often
   5. Very often

12. Is the child fidgety when he has to sit or lie still?

1. Almost never (The child is hardly ever like this; it is not characteristic of him.)

2. Occasionally (The child is like this once in a while; it is only slightly characteristic of him.)

3. Sometimes (The child doesn't do this often, but there are times when he is like this; it is somewhat characteristic of him.)

4. Fairly often (The child is often like this; it is fairly characteristic of him.)

5. Very often (The child is very often like this; it is very characteristic of him.)

Add up all the numbers you circled, and divide by the number of questions you answered (i.e., if you answered all 12 questions, divide by 12). This sum will be referred to as the "anxiety score".

Dr. Bruce D. Grossman

Anxiety Rating Scale -- Part II

Child's Name:_____Score on Part II_____

Please circle the number to the left of the appropriate statement.

1. In rhythms and other activities requiring gross bodily movements does the child show signs of being restricted in movement?

   1. Almost never (The child is hardly ever like this; it is not characteristic of him)
   2. Occasionally (The child is like this once in a while; it is only slightly characteristic of him)
   3. Sometimes (The child doesn't do this often, but there are sometimes when he is like this; it is fairly characteristic of him)
   4. Fairly often (The child is often like this; it is fairly characteristic of him)
   5. Very often (The child is very often like this; it is very characteristic of him)

2. On trips or excursions to new places does the child indicate apprehension or caution about leaving his school room and/or being in the new place?

   1. Almost never
   2. Occasionally
   3. Sometimes
   4. Fairly often
   5. Very often

3. In painting or other small motor activities, have you noticed restriction or caution in the child's movements?

   1. Almost never
   2. Occasionally
   3. Sometimes
   4. Fairly often
   5. Very often

4. Is the child concerned about getting dirty?

   1. Almost never
   2. Occasionally
   3. Sometimes
   4. Fairly often
   5. Very often

APPENDIX Ie

Test Behavior Ratings[1]

I. Task-orientation (interest, attention, etc.)

(1) low (2) moderate (3) high

II. Ease

(1) uneasy (frightened) (2) somewhat uneasy (3) at ease (relaxed)

III. Social-Orientation

(1) low (distant, business-like) (2) moderate (3) high (very much involved with relationship)

IV. Comprehension

(1) low (has difficulty understanding, slow, etc.) (2) moderate (3) high (unusually quick, seems to understand)

V. Mood

(1) sad (2) neutral (3) happy

[1] Developed by Bruce Grossman, Ph.D. Hofstra University - to rate behavior occuring during testing.

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END

APPENDIX II

Scoring Criteria
for Projective Achievement Test (PAT)

Question I

4-Unequivocal Success Volunteers - success answer?	3-a. Moderate competition b. Lots of danger - then success c. D.K. until #3 - then success Coop. than ind. success Success and avoidance	2-a. Coop. (both succeed) b. Joey bigger than other boy - then other boy bigger c. Evasive	1-a. Outright failure b. Coop. and failur

Question II

4-Independent Success (Even after a little help)	3-a. Seeks help and success with help b. Seeks - does not get help but succeeds	2-a. Seeks help and fails b. Evasive	1-Outright failure

Question III

4-Picked and answers correctly	3-a. Not picked, but knows answers b. Picked, but not clear that answers right c. D.A. or D.K. until #3 d. First fails - then succeeds	2-a. Picked but wrong answer b. Evasive	1-Not picked

Question IV

4-J. swings higher	3-a. Ambivalence - danger, but success	2-a. Cooperation or evasive but success. b. D.K. (throughout)	1-a. Falls - other boy wins b. Fail together

Question V

4-Good	3-a. Sometimes bad - sometimes good b. No answer - until #3	2-a. D.K. b. Evasive	1-Bad